

LETTER OF PERMISSION 2002-1
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U.S.A.C.E. 2002 Letter of Permission Procedure
Gravel Mining and Excavation Activities
Humboldt County, California
DRAFT 03/28/02

1.0 INTRODUCTION

1.1 PURPOSE OF LETTER OF PERMISSION PROCEDURE

The purpose of this Letter of Permission Procedure (LOP 02-1) is to provide a process for the U.S Army Corps of Engineers (Corps) to authorize gravel mining and extraction activities in Humboldt County, California. These authorizations are required under Section 404 of the Clean Water Act (CWA) and/or Section 10 of the Rivers and Harbors Act of 1899.

The gravel industry is important to the economy of Humboldt County. However, instream gravel extraction has the potential to produce multiple adverse impacts in riverine habitat and to impact other economic interests (Collins & Dunne 1990; Laird, et al., 2000). This LOP procedure will streamline the process for authorizing gravel mining and extraction activities in Humboldt County in manner that will minimize significant adverse individual and cumulative impacts.

1.2 IMPACT OF ENDANGERED SPECIES ACT

Gravel extraction in Humboldt County is cooperatively regulated by the Corps, Humboldt County Planning Department (County), the California Department of Fish and Game (CDFG), and others. Because Endangered Species Act (ESA) listed species and their habitats are present, the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (Service) are consulted.

Several species that utilize habitat associated with mining activities in Humboldt County have been listed under the ESA. The Service has listed several species of birds as threatened under the ESA, including the Pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*), the northern spotted owl (*Strix occidentalis caurina*), the bald eagle (*Haliaeetus leucocephalus*), and the marbled murrelet (*Brachyramphus marmoratus*); this agency has also designated critical habitat for these species. The NMFS has listed and designated critical habitat for Chinook salmon (*Oncorhynchus tshawytscha*), Coho salmon (*Oncorhynchus kisutch*) and Steelhead trout (*Oncorhynchus mykiss*) within the project area. They will issue biological opinions on relevant listed species and the species habitat regarding the gravel extraction operation. If necessary for species or critical habitat recovery, these biological opinions will require additional environmental safeguards.

1.3 ROLE OF CHERT

This procedure utilizes an independent scientific review team like the County of Humboldt Extraction Review Team (CHERT*¹), to help evaluate potential adverse impacts. In California, City and County agencies are authorized to designate land use on private lands. In 1991, the California Resources Agency and CDFG formed a Scientific Review and Design Committee as part of a Memorandum of Understanding (MOU) that evolved from the California Environmental Quality Act (CEQA) process. This committee was mandated to review and evaluate project specific and cumulative effects of gravel mining in the Lower Mad River. In 1995, the oversight authority was extended to the Lower Eel and Van Duzen Rivers as well, and the name changed to County of Humboldt Extraction Review Team. Shortly thereafter, the County relied on CHERT's recommendations throughout the Humboldt County. CHERT is a team of riverine scientists appointed by the Humboldt County Board of

¹ Throughout the document CHERT* shall refer to this review team or its functional equivalent.

Supervisors. CHERT* assists the Corps, the County, the gravel operators, and the CDFG with site-specific effectiveness monitoring and in reducing the potential adverse environmental impacts normally associated with instream gravel extraction. They do this by providing site-specific recommendations to Humboldt County operators and agencies regarding extraction volume, extraction location and extraction technique. Since 1996, the Corps has also relied on the technical expertise of CHERT* throughout the County. The Corps provides CHERT* with the information necessary to review extraction plans and reports, and coordinates with CDFG, NMFS, and the County.

2.0 AUTHORIZATIONS FROM OTHER AGENCIES:

The permittee is responsible for obtaining all additional federal, state, or local permits that may be required, which may include, but are not limited to:

2.1 STATE WATER QUALITY CERTIFICATION:

California Regional Water Quality Control Board's (RWQCB) certification is required for work within the State of California. For the previous LOP procedure, the State had adopted water quality standards including implementation measures, which avoided and mitigated adverse impacts and prohibited discharges that pollute waters of the State. Currently, the State no longer supports a waiver of water quality standards, and therefore, each applicant must obtain a water quality certification prior to initiating gravel extraction.

The State of California has adopted general National Pollution Discharge Elimination System (NPDES) permits to cover those mining activities which must obtain permits to discharge storm water associated with industrial activity – as defined in 40 CFR Section 122.26(b)(14). For information about NPDES requirements or 401 certifications, applicants can contact the RWQCB, North Coast Region, at 5550 Skylane Boulevard, Suite A, Santa Rosa, CA 95403.

2.2 STREAMBED ALTERATION AGREEMENT

When streambed materials such as sand and gravel are to be disturbed or removed from waters in the State of California, the permittee must obtain a Streambed Alteration Agreement from the CDFG. The permittee can contact the CDFG at California Department of Fish and Game, Region 1, 601 Locust Street, Redding, California 96001.

2.3 CONDITIONAL USE PERMIT

All gravel and mining operations must either be permitted by or exempted by the California Department of Conservation Division of Mines and Geology's Lead Agency. The Lead Agency for Humboldt County is: Humboldt County Planning Office, 3015 H Street, Eureka, California 95501. Failure to provide proof of a conditional use permit, vested rights or exemption letter will preclude use of the LOP procedure.

2.4 COASTAL DEVELOPMENT PERMIT

All project sites located within the California Coastal Commission jurisdictional area and lands identified within the Humboldt County Local Coastal Program area are required to obtain a coastal development permit, waiver or vested right. The Commission may be contacted at: CCC North Coast District, P.O. Box 4908, Eureka, California 95502-4908.

3.0 PUBLIC AND AGENCY EVALUATIONS OF AUTHORIZED ACTIVITIES

Each year in February or March, the Corps may conduct a public interest evaluation and coordination meeting with involved agencies, including but not limited to,

- Humboldt County Planning Department,
- CHERT*,
- U. S. Environmental Protection Agency (EPA),
- National Marine Fisheries Service (NMFS),
- U.S. Fish and Wildlife Service (USFWS),
- California Coastal Commission (CCC),
- California Department of Fish and Game (CDFG), and the
- California Regional Water Quality Control Board (RWQCB)

to review new applications and yearly monitoring data and associated reports of the previous and current year's authorized activities. If an authorized activity has met the conditions of the LOP, and there is assurance, based on the information submitted, that its continued operation for the next season will meet the LOP conditions, it will be allowed to continue under the LOP program for the next season. If necessary to minimize adverse impacts to the aquatic ecosystem, additional special conditions may be added to the LOP on a case-by-case basis.

4.0 SCOPE OF WORK

Work authorized by LOP under this procedure is limited to discharges of dredged or fill material associated with gravel mining activities in waters of the United States within Humboldt County, California or straddling the county line. Activities that may be authorized by LOP under this procedure include, but are not limited to, aggregate mining and work associated with these activities, such as temporary stockpiling of gravel and the construction of temporary coffer dams and road crossings below Ordinary High Water (OHW).

Impacts to waters of the United States, including wetlands, shall be avoided or minimized by the use of practicable alternatives. Reasonable compensation for unavoidable adverse impacts to the aquatic environment will be required. Activities that would cause a substantial reduction in the extent of waters of the United States will not be authorized by this LOP. Activities outside of wetlands or other waters of the United States do not require a Section 10/404 permit.

In general, the operations authorized under this LOP are existing operations where extraction areas, haul roads, stockpile areas, processing facilities, etc., are historic and ongoing. A list of existing operations can be found in Appendix E. Most of these operations have been previously authorized under an earlier LOP procedure first approved in 1996. The authorization of mostly existing historic operations minimizes additional incremental adverse impacts related to new activities, such as removal of riparian vegetation, disturbance to species inhabiting the riparian corridor, or bed elevation change resulting from incremental increase of aggregate extraction volumes.

5.0 LOCATION OF WORK:

An LOP issued under the provisions of this procedure shall apply to work in waters of the United States within Humboldt County, California, and also at any projects that straddle the Humboldt County line. A list of operations eligible to be authorized with this LOP is shown in Appendix E.

6.0 EXTRACTION METHODOLOGIES, PRACTICES AND PROTOCOLS

Activities authorized under the LOP procedure are subject to the following conditions imposed on the design of extraction operations and related activities. These conditions are meant to be flexible and adaptive.

6.1 EXCAVATION

Excavation for gravel mining purposes shall not occur in the live stream (wetted channel area where water is flowing unimpeded). The following guidelines should be used as appropriate to minimize geomorphic and/or habitat impacts at mining sites. These criteria are intended to be site specific and flexible (i.e., adaptive) and are to be incorporated during mining plan preparation and implementation.

Traditional Bar Skimming:

- Skim boundaries are typically laid out as curvilinear benches along the outside of point bars as this usually provides a good replenishment configuration without preventing riparian colonization or encouraging braiding;
- Skim widths are designed to avoid channel braiding (divided flow);
- Skim floors are sloped (either directly toward the low flow channel, in a downstream direction, or somewhere in between) to provide for drainage following inundation and to reduce salmonid stranding potential;
- A vertical offset of two feet between the skim floor and the water surface is generally required to retain low flow and moderate flow channel confinement and to reduce the duration and extent of other impacts. Silt bands, channel thalwegs, riffle crests, and bar surface topographic breaks are sometimes used to help determine vertical offsets and skim floor elevations. With appropriate justification, CHERT* may specify vertical buffers that are less than two feet or greater than two feet. Alternatively, a horizontal offset between the low flow water surface and the skim floor may be specified.
- The head of point bars is usually left undisturbed to preserve sufficient high flow confinement of flows entering the bend and discourage braiding. As used here, the head of a point bar is that portion upstream of its widest point but no less than one third of the bar length.
- If necessary, CHERT* may specify that the extraction area must be clearly flagged, painted with an environmentally benign paint, or staked prior to receiving final CHERT* recommendations.

Floodplain Pits:

- Floodplain pits may be located outside the active channel on frequent floodplain surfaces no higher than the approximate 3 to 7-year floodplain;
- Gentle side slopes (approximately 10:1) are provided around portions of the outer edges of Floodplain pits, with deeper areas in the interior;
- Floodplain pit boundaries are laid out to take advantage of existing riparian vegetation for shade, cover, and bedload inputs;
- Floodplain pits are avoided near the upstream ends of bars to prevent elevating the risk of meander cutoff.

- The total pit area on a bar should not exceed about 10 percent of the bar's surface to avoid elevating the risk of meander cutoff.

Alcoves:

Alcoves are placed and designed to simulate naturally occurring features and are scaled to basin and bar size. If installed early in the summer, alcoves can provide significant cool water refugia and cover during the summer months. Alcoves may also provide refuge from high flows during the winter months.

Old Meander Bends:

Where available, old meander bends may be suitable for excavations that will mimic naturally occurring oxbow lakes.

Deep Trenches:

Trenches may be appropriate where a dry channel exists and diversion of the live channel is not necessary. Trenches may be appropriate where habitat complexity currently exists and where hydraulic control will be maintained.

Additional Alternative Designs:

New extraction methods will be considered and evaluated on a site-specific basis using an adaptive management approach. The goal of these additional designs would include enhancement or development of fish and wildlife habitat while minimizing adverse impacts as compared to traditional mining techniques.

6.2 STORAGE OF EXCAVATED MATERIAL

Prior to October 1st, temporary storage of excavated material may occur on the gravel bar. After October 1st, all excavated material must be removed by the end of each day unless deviation to this practice is authorized by the Corps after coordination with the appropriate agencies.

6.3 MODIFICATIONS FOR FISHERIES AND WILDLIFE HABITAT IMPROVEMENT PROJECTS

Exceptions to the standard operating protocols and extraction design protocols may be made for fisheries and wildlife habitat enhancement projects. Annual monitoring data regarding extraction amounts, cross-sectional information, biological monitoring data and aerial photos will be submitted for any such project to the Corps, NMFS, Humboldt County Planning Department and CDFG. Such projects regardless of operational classification will not be undertaken without the approval of the responsible agencies as well as the applicants.

6.4 HAUL ROADS

Permanent haul roads shall follow existing routes. Temporary haul roads will avoid sensitive areas such as wetlands and riparian vegetation to the extent possible. The location of haul roads will be shown on the spring aerial photo and are subject to the annual review and approval process.

6.5 VEGETATION

Impacts to riparian woody vegetation and wetlands will be avoided to the extent possible. Impacts to woody vegetation must be described in the extraction plan. Any riparian vegetation or wetland that is to be disturbed must be clearly identified by mapping its location on the spring aerial photo and described in the extraction plan. Mapped areas will include wetlands and woody riparian vegetation with drip lines that are within 25 feet of excavation activities (e.g., excavation, stockpiling, parking, and temporary haul roads). Woody vegetation that is part of a contiguous 400 square foot complex or greater, or is at least 1 inch in diameter breast height (DBH) that

is impacted because of extraction activities must be mitigated. Impacts to other woody vegetation may require mitigation at the discretion of the Corps.

6.6 STRUCTURES AND BUFFERS

Owners of in-stream structures were notified during the Humboldt County Planning Department CEQA review and approval process. Owners of in-stream structures may provide input to the Corps relative to protection of their facilities. Gravel removal must remain a minimum distance of 500 feet from any structure (i.e. bridge, municipal water intake, dam, etc.) in the river. Gravel extraction may encroach within this setback if it is allowed in the conditional use permit, approval is given by owners of the structures, and it is approved by the Corps. Otherwise, setbacks made part of Humboldt County Planning Department approvals are in effect.

6.7 GRADING

The finished skimmed floor surface shall be free-draining and free of depressions in order to reduce impacts to fish and wildlife species (e.g., fish stranding and effects to snowy plover nesting habitat). After October 1st, the entire extraction area shall be graded by the end of the workday on a daily basis. Grading includes filling in depressions, grading the equipment staging/excavation site according to prescribed grade, sloping extraction surfaces to the buffer's edge and/or downstream, and removing all temporary fills and berms from the project area.

6.8 TIMING

An annual general timeline of related extraction activities is shown in Appendix D. Unless the letter of permission is specifically modified, gravel extraction shall not commence until June 1, and shall cease by October 15 of each year. On some river reaches, requests for extensions of this period to November 1st shall be reviewed by the Corps, NMFS, CDFG and Humboldt County Planning Department. The applicant, however, must have graded the site before an extension can be authorized. Requests for extensions must include a monitoring plan for flow levels and include site-specific information related to the extraction area (e.g. summer crossing not required, extraction floor elevation relative to water surface elevation, excavation progressing from the downstream limit of extraction upstream, etc.). Extensions of operations are subject to approval by the Corps after discussions with CDFG and NMFS.

6.9 STREAM CROSSINGS FOR GRAVEL MINING PURPOSES

The number of stream crossings must be kept to a minimum. All stream crossings must be spanned to the maximum length possible using a flatcar or bridge span, and must maintain a three-foot elevation above the water surface. Culvert crossings may be utilized in certain circumstances where the size and nature of the crossing dictates that culverts are more appropriate and listed fish will not be affected. Information describing the need for bridges or culverts must be submitted to the Corps, NMFS, CHERT*, and CDFG in the excavation plan and all proposed crossings must be shown on the spring aerial photomap. Stream crossings should be located and installed to minimize impacts to salmonids. Refer to Appendix D for timing related to stream crossing construction and removal.

6.10 LISTED SPECIES UNDER THE FEDERAL ESA

All applicants shall participate in an annual biological monitoring effort. All applicants shall submit a written assessment by a qualified biologist describing the potential effects of the project on federally threatened, endangered, or proposed species under the Endangered Species Act. Thereafter, all new applicants or existing projects that are substantially changed as to be outside the scope of the original assessment shall submit a new or revised assessment.

7.0 APPLICATION AND EVALUATION PROCEDURES:

Each year, individual operators shall apply to the Corps for a project modification letter reflecting approval of annual operation modifications. Applications shall be divided into two categories based upon the quantity of material removed from the river basin. The two categories of operations are: Class A projects: Projects with permits to remove 5,000 cubic yards or more per year and Class B projects: Projects with permits to remove less than 5,000 cubic yards per year. Class B projects must be physically separated from other gravel operations to be considered separate projects. Class B projects cannot be located on the same gravel bar, or on the same parcel number as other projects, and be considered as separate projects. The Corps reserves the right to elevate Class B projects to Class A status.

The operators shall submit their annual applications concurrently to the Corps, NMFS, CDFG and CHERT*. The activity may not begin each year until a confirmation letter of modification has been issued by the Corps. It is the applicant's responsibility to insure that the authorized project meets all of the terms and conditions set forth herein; failure to abide by them will constitute a violation of the Clean Water Act and/or the Rivers and Harbors Act of 1899.

Applicants shall submit complete annual extraction plans, pre-extraction cross section data, post extraction reports, post-extraction cross-section data, and biological monitoring information to the Corps, NMFS, CDFG and the County for the purpose of determining class of operation and compliance with the standards established within LOP 02-1. Applicants shall have their physical and biological data and annual reports reviewed by the Corps, NMFS, CHERT* and the CDFG to evaluate compliance with CDFG streambed alteration agreements and the LOP. Applicants shall participate in comprehensive annual hydrologic geomorphic and fisheries habitat reviews of annual extraction activities for their river and submit the required monitoring reports and data regarding their operations to the Corps, NMFS, CHERT* and the CDFG. See Appendix D for the required submittal dates.

Pre-Extraction Submittal Requirements

Each permittee must submit their annual extraction plans to CDFG, NMFS, the Corps and the County. CHERT* shall review the applicants extraction plan and submit their recommendations thru the County to the Corps, NMFS, and CDFG. The gravel extraction activity may not begin until a confirmation letter of modification has been issued by the Corps. See Appendix C for plan content requirements. An annual general timeline of related extraction activities is shown in Appendix D.

Post-Extraction Submittal Requirements

Class A and Class B operators shall submit a complete post extraction report to CDFG, NMFS, the Corps and the County at the completion of extraction and no later than December 1st. See Appendix C for extraction report content requirements.

8.0 SITE VISITS AND NOTIFICATIONS

Site visits can be requested by the Corps, any consulting agency, or the applicant/permittee. The applicant/permittee or an appropriate representative will be present at all site visits and inspections in order to comply with the U.S. Department of Labor, Mine Safety and Health Administration regulations.

Project owners must inform the Corps, CDFG, NMFS, and the County soon after excavation and grading is completed. This notification is needed in order to schedule post extraction site reviews. Such notification shall be by phone, fax, or e-mail.

9.0 AUTHORIZATION

Work may not proceed until the applicant is given specific authorization from the Corps of Engineers. The LOP 02-1 procedure is not valid until the District Engineer has reviewed, circulated for review and approved this procedure. It is the applicant's responsibility to insure that the authorized project meets the terms and conditions set forth herein; failure to abide by them will constitute a violation of the Clean Water Act and/or the Rivers and Harbors Act of 1899.

This procedure shall become effective on the date of the signature of the District Engineer, or his authorized representative, and will automatically expire on December 31, 2007, unless the procedure is modified, revoked, or extended before that date. Activities authorized under this permit require annual renewal letters of modification approving extraction plans for the current year. Unless reauthorized, this procedure will expire on December 31, 2007.

10.0 COMPLIANCE

The Corps is responsible for determining compliance with this LOP. Prior to making a final determination on any compliance issue, the Corps may consult with the permittee, CHERT*, CDFG, NMFS and/or USFWS. The Corps may take actions to rectify projects which are not in compliance. Permittees not in compliance may be subject to permit suspension, revocation or other enforcement action.

11.0 REQUIRED MITIGATION

Each permittee shall mitigate impacts to riverine resources according to the following hierarchy:

1. Avoidance of the impact,
2. Minimization of the impact,
3. Rectifying the impact,
4. Reducing or eliminating the impact over time, and finally
5. Compensating for impacts.

A mitigation plan shall be submitted with applications for all projects that will adversely affect wetlands and riparian vegetation. Mitigation must consider the size and age of the vegetation removed or adversely impacted. Following excavation, all vegetative mitigation must be planted between November 1 and February 28 and must have an approved survival rate (percentage of total species survival agreed upon by the Corps and the Applicant) over three growing seasons. Failure to obtain a three-year survival rate shall require replanting and additional monitoring. Annual reports depicting the survival of vegetation shall be due by December 31 each year for three growing seasons after planting year.

Mitigation for unanticipated impacts will be decided on a case-by case basis. The Corps may consult with CHERT*, CDFG and NMFS or USFWS before approving mitigation for unanticipated impacts.

12.0 DURATION OF THE LOP

This procedure will be authorized until December 31, 2007. The Corps reserves the right to alter the period of this procedure based upon the receipt of new significant information pertaining to the subject activities or change in environmental law.

13.0 NEW PROJECTS

A new project is any project that is not listed in Appendix E. New operations will be required to obtain individual permits from the Corps. The new project applicant must submit to the Corps and the consulting regulatory agencies participating in the Public Interest Meetings, by February 1 of the initial gravel mining year, copies of the environmental documentation required by the Lead Agency when requesting a conditional use permit, vested right or exemption. The Corps may also require additional information.

14.0 CONDITIONS OF THE LETTER OF PERMISSION

In addition to limitations and conditions discussed above, projects authorized by this procedure are subject to the general conditions contained below and any special conditions that may be added to a permittee's Letter of Permission or Modification.

1. The Department of the Army has relied in part on the information provided by the permittees. If, subsequent to issuing this procedure, such information proves to be false, incomplete, or inaccurate, this procedure may be modified, suspended, or revoked, in whole or in part.
2. Permittees whose projects are authorized by this LOP shall comply with all terms and conditions herein. Failure to abide by such conditions invalidates the authorization and may result in a violation of the law, requiring restoration of the site or other remedial action.
3. An LOP should not be considered as an approval of the design features of any authorized project or an implication that such is considered adequate for the purpose intended. A Department of the Army permit merely expresses the consent of the Federal Government to the proposed work insofar as public rights are concerned. This permit does not authorize any damage to private property, invasion of private rights, or any infringement of federal, state or local laws or regulations. Nor does it relieve the permittee from the requirement to obtain a local permit from the jurisdiction within which the project is located and to address all non-encroachment restrictions within a floodway of such local jurisdiction as identified by the Federal Emergency Management Agency.
4. This LOP procedure may be modified or suspended in whole or in part if it is determined that the individual or cumulative impacts of work that would be authorized using this procedure are contrary to the public interest. The authorization for individual projects may also be summarily modified, suspended, or revoked in whole or in part, upon issuance of written finding(s) becoming part of the Public Record, by the District Engineer that immediate suspension of the project would be in the public interest. Written findings shall be based upon evaluation of the existence of substantial evidence in the public record specific to the defined project area.
5. Any modification, suspension or revocation of the District Engineer's authorization shall not be the basis for any claim for damages against the United States.
6. This permit does not authorize the interference with any existing or proposed Federal project, and the permittee shall not be entitled to compensation for damage or injury to the structures or activities authorized herein which may result from existing or future operations undertaken by the United States in the public interest.

7. No attempt shall be made by the permittee to prevent the full and free public use of all navigable waters of the United States, at or adjacent to the project authorized herein.
8. There shall be no unreasonable interference with navigation by the existence or use of the permanent and temporary structures authorized herein.
9. The permittee shall make every reasonable effort to conduct the activities authorized herein in a manner that will minimize any adverse impact of the work on water quality, fish and wildlife, and the natural environment, including adverse impacts to migratory waterfowl breeding areas, spawning areas, and riparian areas.
10. The permittee shall allow the District Engineer and his authorized representative(s) to make periodic inspections at any time deemed necessary to assure that the activity being performed under this authorization is in accordance with the terms and conditions prescribed herein.
11. The impact of activities authorized by LOP using this procedure on cultural resources listed, or eligible for listing, in the National Register of Historic Places (NRHP), shall be taken into account by the U.S. Army Corps of Engineers (Corps) prior to initiation of work. If previously unknown cultural resources are encountered during work authorized by this permit, the San Francisco District shall be notified and the sites avoided until the Corps can assess their eligibility for listing in the NRHP. Sites determined to be eligible for listing in the NRHP shall require consultation between the Corps and the State Historic Preservation Office and/or the Advisory Council on Historic Places. Cultural resources include prehistoric and historic archaeological sites, and areas or structures of cultural interest, which occur in the permit area.
12. All temporary fills within waters of the U.S. shall be removed in their entirety.
13. All extraction activities near federal projects shall be coordinated for required setback distances with the Corps office prior to application for a permit.
14. No authorization will be granted under this LOP procedure for any activity that is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Endangered Species Act, or that is likely to destroy or adversely modify the critical habitat of such species. Permittees shall notify the District Engineer if any listed species, proposed species or critical habitat might be affected by, or is in the vicinity of, the project, and shall not begin work until notified by the District Engineer that the requirements of the Endangered Species Act have been satisfied and that the activity is authorized.
15. The project shall not significantly disrupt the movement of those species of aquatic life indigenous to the water body or those species that normally migrate through the project area.

15.0 COMMUNICATION WITH THE CORPS OF ENGINEERS

Communications should be mailed to:

U.S.A.C.E., San Francisco District
Regulatory Branch, Eureka Field Office
P.O. Box 4863
Eureka, CA 95502-4863

For questions, telephone the Eureka Office at (707) 443-0855 or FAX (707)443-7728.

Our email addresses are:

David.A.Ammerman@spd02.usace.army.mil

Kelley.E.Reid@spd02.usace.army.mil

This procedure becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

DRAFT

TIMOTHY S. O'ROURKE
Lieutenant Colonel, Corps of Engineers
District Engineer

DATE

APPENDIX A - WILD AND SCENIC RIVER SECTIONS
IN HUMBOLDT COUNTY, CA

Waterway	Section	River Value
Eel River:	Humboldt County Line to the Pacific Ocean	Recreational
South Fork Eel:	Humboldt County Line to the confluence with the Eel	Recreational
Klamath River:	Humboldt County Line to the Pacific Ocean	Recreational
Trinity River:	Confluence with South Fork Trinity River to west boundary of Section 2 T8N R4E	Recreational
Trinity River:	West boundary Sect. 2 T8N R4E to confluence of Klamath River	Scenic
South Fork Trinity:	Humboldt County line to Todd Ranch in Sect. 18 T5N RSE	Wild
South Fork Trinity:	Todd Ranch in Sect. 18 T5N RSE to confluence of Trinity River	Scenic
Van Duzen River:	From Dinsmore Bridge to power line crossing above Little Larabee Creek	Scenic
Van Duzen River:	From the power line crossing above Little Larabee Creek to the confluence with the Eel River	Recreational

APPENDIX B – CHERT* SURVEYING AND CROSS SECTION REQUIREMENTS

GRAVEL MINING AND EXTRACTION ACTIVITIES IN HUMBOLDT COUNTY, CA

B-1 GENERAL SURVEY REQUIREMENTS

Unless otherwise authorized by CHERT*, the operators and their consultants shall abide by the instructions and requirements presented in this appendix.

Cross-sections, maps, and associated calculations such as extraction volumes, must be prepared under the direction of a State of California Licensed Land Surveyor or legally authorized Professional Engineer and certified as to content and accuracy.

All surveys among all extraction sites including all benchmarks and cross section endpoints shall be tied to the 1988 North American Vertical Datum (NAVD) and to the 1983 North American Datum (NAD).

B-2 MONITORING CROSS SECTION SURVEYING REQUIREMENTS

Monitoring cross-sections are permanent, monumented cross-sections used to document yearly and long-term changes in river channel elevation and morphology at extraction sites. They also aid in extraction planning and in the estimation of volume extracted. All monitoring cross sections shall be surveyed each year regardless of extraction or lack thereof. Monitoring sections, by themselves, should not be utilized for volumetric calculations unless coupled with intervening cross sections and/or ground-truthing of geomorphic features across monitoring section intervals.

Unless otherwise authorized by CHERT* the number and layout of required monitoring cross-sections for an extraction project shall follow the guidelines below:

1. Two bench marks (permanent monuments/endpoints) shall be established for each bar above the watercourse's active banks and in positions such that they will not be eroded away by relatively frequent (<10yr flow) events. Bench marks/endpoints shall be tied to a common vertical and horizontal control datum, the 1988 North American Vertical Datum (NAVD) and to the 1983 North American Datum (NAD), among all extraction sites.
2. All monitoring cross-sections shall be surveyed each extraction season regardless of extraction or lack thereof along all portions of the cross sections where inundation or topographic change occurred since the last survey.
3. A hypothetical centerline of the river channel, measured equidistant from both banks and delineating the centerline of channel at bank full flow must first be established to determine the length and orientation of the "project line".
4. If the radius of curvature of the bank full flow centerline is less than ten times larger than the average bank full flow channel width of the project reach, then the reach is considered a bend. If the radius of curvature is more than ten times larger than the average bank full flow channel width of the project reach, the reach is considered straight.

5. Cross-sections shall be oriented perpendicular to the bank full flow centerline. Monitoring cross section orientation through bends shall be equally proportioned through the internal angle of the centerline radius segment.
6. The number of and spacing of monitoring cross sections shall be approved by CHERT*.
7. Cross-sections shall remain consistent with historical cross-section locations. New monitoring cross-sections may be added and historic monitoring cross sections may be dropped from the data set if a shift in the river course causes gross misalignment of monitoring cross sections. Newly aligned cross sections shall be oriented normal to the bank full flow centerline as described above. Modification to monitoring cross section spacing and orientation may be recommended or approved by CHERT*.
8. The first monitoring cross-section shall extend across the channel at the upstream limit of the project reach (entire project site); the last cross-section shall extend across the channel at the downstream limit of the project reach. All cross sections shall be labeled in a consecutive descending order beginning with the upstream project cross section.
9. Cross-sections shall extend completely across the river channel (so as to include the entire actively scoured channel width) and shall terminate either on the banks of the river within mature riparian vegetation (clearly older than 10 yr; DBH >4 in.), or on the 10-year flood terrace.
10. Cross-section endpoints shall be monumented and labeled in the field and accurately located on the annual air photomaps. Flagging, survey stakes, or environmentally benign paint shall be used to mark monitoring cross-sections at all sites.
11. Cross-section endpoints shall be placed far enough away from eroding banks that they will not be removed by relatively frequent flows (e.g., by flood intervals smaller than the 10-year event).
12. Cross-sections may be surveyed in any manner practical to the engineer/surveyor as long as data accuracy standards are maintained and cross-sections are submitted as described herein
13. The maximum distance between any two-elevation points along a cross-section or profile shall be 50 feet, including surveyed points within the wetted channel. Exception: if ground outside wetted channel is essentially level for a distance of 200 feet, distance between points can be increased to 100 feet. All obvious breaks in slope must still be included.
14. The pre-extraction monitoring cross-section surveys should go all the way across the river. However, they need only include those portions of each cross-section that can be safely surveyed. If the river level rises following the spring surveys, causing redistribution of sediment through the channel cross section, the monitoring lines affected by the redistribution of sediment shall be resurveyed along the portion of the affected cross sections.
15. Post-extraction monitoring cross-sections need only be resurveyed through portions of the cross-section altered by extraction and those cross-sections and/or portions of cross sections not surveyed during the spring effort. Portions affected by temporary stockpiles, road construction, and equipment storage areas shall also be resurveyed.

16. Stake or spray paint at least three points on the ground in each cross-section at time of survey (to facilitate the field review as it relates to orientation within the site and actual location along the cross-section). One of the stakes should be at the waters edge on the extraction side of the river at the time of spring surveys. Position of stakes to be included in surveys and noted on submitted cross sections for ease of field reference. Stakes should be labeled with cross-section identification and point number, if used by the surveyor (flagging may be used where vegetation suitable for flagging exists). Location and description of survey reference points shall be noted on submitted cross sections.

B-3 EXTRACTION CROSS-SECTION SURVEYING REQUIREMENTS

Extraction area cross-sections are temporary or semi permanent cross-sections used for planning the extraction, for estimating the volume of material extracted and for evaluating compliance with approved gravel extraction plans. Extraction areas are individual sites that will be extracted and/or graded during gravel extraction activities. There may be more than one extraction area per gravel bar or operation. When it is practical to do so, the exact same extraction cross sections shall be used for multiple years. At other operations the extraction cross sections will be used for one year only. Unless otherwise authorized by CHERT* the number and layout of required monitoring cross-sections for an extraction project shall follow the guidelines below:

1. A baseline or centerline for the proposed extraction, extending down its long axis must be established. The centerline/baseline shall be oriented parallel to the direction of river flow at the time of the spring survey. For off-channel mining plans, alignment of the centerline/baseline shall maintain a reasonable upstream/downstream alignment, but may vary based upon location of the extraction area and controlling features (use best survey and hydraulic methods).
2. The number and placement of extraction cross sections will be adequate to reasonably estimate the extraction volume. A minimum of three (3) equally spaced extraction cross-sections shall be surveyed in each extraction zone or area. Extraction areas less than 500 feet in length require a minimum of three extraction cross sections. Extraction areas greater than 500 feet in length shall maintain a minimum of five (5) extraction cross sections.
3. Extraction cross sections shall be located near the head and tail (ends) of the extraction area and spaced throughout the site to reasonably capture the topography of the extraction site and maintain maximum accuracy in determining volume of excavated material.
4. Operational grade control for excavation should also be considered when determining the number and spacing of extraction cross sections. The head and tail (ends) of extraction areas that fall outside of the cross section grid shall be included in volumetric estimates.
5. When bar skimming near the edge of the water is to be used, the extraction cross sections should extend into the water, preferably to the thalweg, but no further than is safe.
6. Extraction cross-sections shall be surveyed prior to extraction and used to design the extraction and estimate the extraction volume.
7. Extraction cross-sections, in areas altered by extraction, shall be resurveyed after extraction is complete.
8. Extraction cross-sections require temporary (seasonal) monuments at each end, such as stakes or rebar, which can be relocated after extraction is complete.

9. Extraction cross-sections should be clearly staked and marked on the ground so that they can be readily located in the field.
10. Extraction cross sections shall be tied by survey to project site datum consistent with the monitoring cross section survey control network.

B-4 BAR SURFACE PROFILE SURVEYING REQUIREMENTS

At some sites one or more pre extraction and post extraction profile of the bar surface will be needed to adequately plan and monitor the extraction. These profiles may be needed in situations where the existing cross sections do not adequately represent the existing bar topography or where they will not adequately represent the post extraction bar topography. CHERT* will specify where, when, and why this information is needed.

B-5 RIFFLE CREST AND THALWEG PROFILE INFORMATION

At some sites riffle crest elevations and/or thalweg profiles will be needed to adequately plan and monitor the extraction. This information will be especially useful where riffles are located near or adjacent to extraction areas and where vertical buffers may be tied to thalwegs or riffle crests. CHERT* will specify where, when, and why this information is needed.

B-6 PREPARATION OF CROSS SECTIONS AND PROFILES

All cross sections and profiles will be professionally drawn and certified. Colored lines will not be accepted. All Cross-Sections shall be prepared according to the following criteria:

1. Submitted cross-sections shall be plotted to the nearest 0.1ft and should include:
 - a. end points and ground surface elevation at end points
 - b. all obvious breaks in slope
 - c. notation and elevation of water surface at date of survey
 - d. survey control points as needed to locate cross-sections in field
2. All surveys are to be tied to a common vertical and horizontal control datum among all extraction sites. This is specified as the 1988 North American Vertical Datum (NAVD) and 1983 North American Datum (NAD) elevation for sea level.
3. Cross-sections and profiles at all sites shall be plotted using the following scales:

Horizontal Scale	1:1200	1 inch = 100 feet
Vertical Scale	1:120	1 inch = 10 feet

4. Cross-sections and profiles shall be plotted on grid paper, with 10 grid lines to the inch, horizontal and vertical. Grids are to be visible in the reproduced paper copies provided to CHERT*, NMFS, the Corps and the CDFG.
5. Various sizes of paper are acceptable depending upon the length of the cross sections. Guidelines are shown in the following table. Larger sheets with multiple cross sections per sheet are also acceptable.

Cross Section Length in Feet	Acceptable Paper Size
------------------------------	-----------------------

< 500	8 ½' x 11"
500 – 1200	8 ½' x 11"
$\geq 1200 - 1600$	8 ½' x 14" or 11" x 17
$\geq 1600\text{ft}$	8 ½' x 14" or 11" x 17"

6. Cross-sections and profiles can be cut and stacked so that whole cross-sections and profiles can be placed on one page. Cross-sections and profiles that are cut and stacked must be consistently presented each year.
7. Cross-sections are to be surveyed and drafted consistently so that the right bank (RB) of the river as you face downstream is at the right side of the drafted cross-section. Cut and stack of sections at the same distance from the left end-point.
8. Zero (0) distance of the cross-sections shall be located at the originally established left (LB) endpoint as you face downstream. Bank erosion left of the origin (left end-point) shall be given a negative distance based upon the originally set left end-point, or zero distance.
9. Cross-sections and profiles shall have clearly labeled vertical and horizontal axes. Each cross section should have its own horizontal and vertical axis to facilitate measurement of distances and elevations (rather than a single set of axis labels at bottom of page).
10. Elevations, notations, etc. on the cross-sections shall be clearly legible.
11. Some sample cross sections are shown at the end of this appendix.
12. The net cross-section end area changes, pre-extraction to post-extraction, or post-extraction to next year's pre-extraction, as appropriate, should be calculated for each cross-section and shown on the cross section. Measurements and calculations should be included unless the software does it internally.
13. The annual survey data for each complete cross-section shall be provided to CHERT* on a 3.5" diskette on or before December 1st. It shall be presented as a digital file in ASCII text format (alphanumeric, tab-delimited) or in an EXCEL work sheet. The data shall be grouped by cross-section and organized from L bank to R bank, using the format below: An example is shown.

XS 20+78 Mad River, Logger Bar May 17th 2001 Surveyed by: Accurate Art's Survey Emporium		
HD (feet)	Elevation (feet)	Description
0.0	57.94	Left end pt. rebar
0	57.35	Ground Left end pt.
23.0	56.72	Edge Veg/Top Bank Lt
46.3	51.21	Left edge Active Channel
56.7	48.3	Edge of water

72.6	46.3	Break
87.1	45.2	Thalweg

14. Cross-sections for planning extractions should be surveyed in the spring as soon as flow and seasonal weather conditions permit. Post-extraction cross-sections shall be surveyed as soon as practicable after mining ends, and definitely before high flows occur. The annual post extraction cross sections and post extraction monitoring cross sections shall be submitted to CHERT* on or before November 1st.

B-7 ADDITIONAL REQUIREMENTS FOR MONITORING CROSS SECTIONS

1. Where discernible, elevation and position of high water marks for previous winter's flow (flood marks); these should be consistently determined among cross-sections.
2. Water-surface elevation and location (both banks) if safely and reasonably attainable at the time of survey.
3. Cross-sections shall include the river bottom (especially location of the thalweg) as well as the water surface. Water surface elevation alone is insufficient; the bed must be included.
4. Active channel limits.
5. The elevation and location of to silt band shall be included if visible at time of survey.
6. Location of major vegetation breaks, e.g., edge of willow or riparian forest, notation of vegetation patches located within extraction areas.
7. Water discharge at time of survey (from nearest USGS gage) to be shown in cross-section legend.
8. Flood marks, silt line, water's edge, monuments, reference stakes should all be clearly labeled in the cross-section and their elevations indicated.
9. For spring cross-section data all monitoring cross-sections shall include the current year's spring cross-section overlain on the previous year's spring and fall (if any) cross-sections. The area of actual extraction should be lightly shaded or hatched. Water-surface should be shown with a dotted line, and its date clearly indicated.
10. For post extraction data, all monitoring cross-sections which overlap the extraction area shall include the current year's post extraction cross section data overlain on the current year's pre-extraction cross-section data and the original approved prescription. The most recent survey should be shown as a heavy solid line; the next recent survey should be shown as a light solid line and the extraction proposal as a dashed line. Line type shall be maintained consistent year-to-year.

B-8 ADDITIONAL REQUIREMENTS FOR EXTRACTION CROSS SECTIONS

1. Spring extraction cross-sections shall be overlain on the previous fall extraction cross section (if any) and shall include the spring cross-section data overlain on the proposed design template. The proposed area of extraction should be lightly shaded or hatched so that it is apparent on reproduced (copied) prints.
2. Post extraction cross-sections shall include the fall cross-section data overlain on the previous year's post extraction (if any) and the current year's pre extraction cross-section data and the design template. The actual area of extraction should be lightly shaded or hatched so that it is apparent on reproduced (copied) prints.
3. The net cross-section area change pre-extraction to post-extraction should be calculated for each cross-section and shown on the cross section. Estimated volume extracted should be computed, using double end area method or computer generated digital terrain models. All measurements and calculations should be included and verified by a California Licensed land Surveyor or appropriately authorized engineer.
4. When bench skims are used for extraction the elevation of the proposed skim floor shall be shown on each pre extraction cross section and the actual elevation of the skim floor shall be shown on each post extraction cross section. If the skim floor has a transverse slope towards the water surface the required elevations shall be those at the edge of the excavation closest to the water.

B-9 PREPARATION OF MAPS

Class A Operations:

1. All site maps shall be prepared on a high quality color photocopy of a vertical aerial photo from the current year. Site maps should show the river, all proposed extraction activities, all roads, all stream crossings and any other pertinent information. Site maps should have a scale of approximately 1:6000 (1in = 500 ft).
2. All monitoring cross-sections should be accurately located and labeled on the site map. In particular, the end points of each cross-section must be located in their true positions.
3. Pre-extraction aerial photos should be taken when the river is low enough to see the channel. Earlier photos may be used for preliminary planning, but a current year photo set is required and should be used for the site map.

Class B Operations:

1. A vertical aerial photograph is not required for Class B projects. A plan view map of the entire project site may be drawn on 8.5 by 11 inch or 11 by 17 inch paper. Map scale shall be 1:6,000 (1 inch = 500 feet). Drawings should be labeled with dimensions, and quantities of material removed from each site.
2. A pre extraction vertical aerial photograph or high-oblique ground photograph of the project site is required. Sketch the location of monitoring cross sections, the extraction area, all roads and stream crossings on the photograph.
3. A similar post extraction photograph is also required. If the pre extraction photograph was a high oblique than the post extraction photograph should be taken from the same point with the same camera lens.

Sketch the location of monitoring cross sections, the extraction area, all roads and stream crossings on the photograph.

APPENDIX C – PRE- AND POST-EXTRACTION REPORTS

GRAVEL MINING AND EXTRACTION ACTIVITIES IN HUMBOLDT COUNTY, CA

C-1 CLASS A PROJECTS

These projects remove 5,000 cubic yards of material or more per year from the river basin. Project submittals must include a description of the project and at least the following information, unless modified by the Corps, on a yearly basis.

Pre-Extraction Submittal Requirements:

- A. A pre-extraction vertical color aerial photomap of the location shall be included. Photos shall be taken in the spring of each year and shall include the entire project reach and the immediate upstream and downstream reaches within one half length of the project reach, as measured along the thalweg. Pre-extraction photos shall be vertical photos at a scale of 1:6,000 (1 photo inch = 500 feet on the ground). All proposed extraction activities, including extraction areas, roads, and stream crossings shall be drawn on the aerial photograph. Permitted extraction areas and unpermitted areas should be clearly indicated on the photograph so CHERT* and others reviewing the plan will know where extraction possibilities exist.
- B. Monitoring cross sections shall be included. Monitoring cross-section surveys shall be done according to Appendix C (attached), unless modified by CHERT* and approved by the Corps. If CHERT* agrees, the pre-extraction submittal need only contain those monitoring lines passing through areas proposed for extraction. Completed monitoring cross sections for the project reach shall accompany the post-extraction submittal.
- C. Extraction cross sections shall be included. Extraction cross-section surveys for each proposed extraction area shall be conducted according to guidelines in Appendix C.
- D. Other survey data needed for planning purposes and required by CHERT* which may include but is not limited to adjacent thalweg profiles, nearby riffle crest elevations and necessary bar surface profiles.
- E. A Stream Alteration Agreement (SAA) or any extension signed by the CDFG, or a Riparian Protection and Surface Mining Permit signed by a federally recognized Indian Reservation. Permits may be obtained concurrently with the Corps permit;
- F. A mitigation report describing:
 - past impacts at the site and the status of required mitigation
 - the unavoidable impacts expected during current operating season and the mitigation proposed to minimize or compensate for these impacts;

- G. Determine the length and area of roads to be used for extraction within the project area. Enter data in a road summary table. See the following example.

BIG BAR 2002 PROPOSED ROAD SUMMARY		
Road Type	Length (feet)	Area (acres)
Permanent Roads		
Active Channel Roads		
Totals		

- H. Include all proposed extraction volume calculations. As indicated in Appendix C, Section C-1 all calculations must be certified by licensed surveyor or engineer
- I. Determine the surface area that will be disturbed by extraction and the volume of extraction. Summarize by extraction category and equipment to be used. Use the following table format to summarize the data.

BIG BAR 2002 PROPOSED EXCAVATION SUMMARY				
Area	Area (acres)	Volume (cubic yards)	Category	Excavation Equipment
1	4.36	16,200	Skim	Loader & Scraper
2	2.12	33,880	Floodplain pit	Excavator
3	.03	270	Alcove	Excavator
Totals	6.51	50,350		

Post-Extraction Submittal Requirements

- A. The complete post extraction cross sections and certified actual extraction volumes shall be submitted to CHERT* on or before November 1. Include the post-extraction survey of extraction cross sections and monitoring cross sections that were modified by extraction. These surveys shall be conducted following cessation of extraction and before alteration of the extraction area by flow following fall rains, preferably before October 15th.
- B. The post extraction report and all supporting data shall be submitted to CHERT*, the Corps and CDFG on or before December 1st.
- C. A revised pre-extraction color aerial photomap shall be included. All actual extraction activities, including extraction areas, roads, and stream crossings shall be drawn on the aerial photograph.
- D. Completed monitoring cross sections for the project reach shall be included in the post-extraction report.
- E. Calculate the actual volume extracted and include all calculations in the report. Summarize calculations using the following table format.

BIG BAR 2002 ACTUAL EXCAVATION SUMMARY				
Area	Acres (acres)	Volume (cubic yards)	Category	Excavation Equipment

1	2.20	8,560	Skim	Loader & Scraper
2	2.18	33,980	Flood plain pit	Excavator
3	.02	200	Alcove	Excavator
Totals	4.40	42,740		

- F. Stereoscopic color photo coverage of the project reach shall be taken in the low-flow periods and be at a scale of 1: 12000. Photos shall be taken from a fixed or vertical oriented (i.e. belly-mounted) camera. Stereoscopic photos for Humboldt County shall be taken in late September or early October while the river flow is less than 100 cfs as measured at the Arcata Mad River gauge. Photos shall be recorded on a 9 inch by 9 inch format. Photos shall be included in the post extraction report. The photos should cover the lower Mad River from the fish hatchery downstream to the Hammond Railroad Bridge; the lower Eel River from the mouth of the Van Duzen downstream to Fern Bridge; and all other Class A project sites.
- G. The results of required biological monitoring report data as described in Appendix K (attached), except for information gathered in November and December, which is due on December 31.
- H. Summarize the actual unavoidable adverse impacts and propose mitigation.

C-2 CLASS B PROJECTS

Projects that remove less than 5,000 cubic yards of material from the river basin per year are Class B projects. Class B projects must be physically separated from other gravel operations and cannot be located on the same gravel bar or parcel as other projects in order to qualify as a Class B operation. The Corps reserves the right to elevate Class B projects to Class A status. Project submittals must also include a description of the project and at least the following information.

Pre-Extraction Submittal Requirements

- A. Monitoring cross-section surveys shall be done according to Appendix C (attached), unless modified by CHERT* and approved by the Corps. If CHERT* agrees, the pre-extraction submittal need only contain those monitoring lines passing through areas proposed for extraction. Completed monitoring cross sections for the project reach shall accompany the post-extraction submittal.
- B. Plan and cross-section view drawings of the project site on 8.5 by 11 inch or 11 by 17 inch paper. Drawings shall be labeled with dimensions, and quantities of material removed from each site. Also, map the location of all riffles adjacent to the project.
- C. A minimum of one monitoring cross-section and three extraction cross-sections per extraction site (See Appendix C for cross-section details).
- D. Calculate the volume to be extracted and include all calculations in the report.
- E. A copy of the SAA signed by the CDFG, or a Riparian Protection and Surface Mining Permit signed by the federally recognized Indian Reservation. Permits may be obtained concurrently with the Corps permit.
- F. A vertical color aerial photo or high oblique color photos of the mining area before excavation. If high oblique ground photos are used, the photo point(s) location(s) shall be mapped (location and direction) to

maintain consistency with post-extraction report photos. Include details about camera lens used to obtain oblique photographs.

- G. Mapping and description, including size, species and number, of any riparian vegetation that will be removed, cut, or within 25 feet of excavation, stockpiling or trafficking of gravel and any wetland that will be impacted. Also included in submittal shall be a mitigation plan to minimize and compensate for any unavoidable impacts.

Post-Extraction Submittal

- A. The complete post extraction cross sections and certified actual extraction volumes shall be submitted to CHERT* on or before November 1. Include the post-extraction survey of extraction cross sections and monitoring cross sections that were modified by extraction. These surveys shall be conducted following cessation of extraction and before alteration of the extraction area by flow following fall rains, preferably before October 15th.
- B. The post extraction report and all supporting data shall be submitted to CHERT*, the Corps and CDFG on or before December 1st.
- C. Include post-extraction monitoring and extraction cross-sections according to Appendix C.
- D. Report the certified actual volume extracted and include all calculations.
- E. Photos of the mining area after excavation. Photos shall be taken from the same location as pre-extraction project photos.

APPENDIX D – GENERAL TIME LINE OF LOP ACTIVITIES

GRAVEL MINING AND EXTRACTION ACTIVITIES IN HUMBOLDT COUNTY, CA

The general time line for the annual LOP process is stated below.

February 1; New applicants for the Corps LOP process must submit notification to the Corps with environmental documentation substantiating CEQA and Lead Agency compliance.

February 1; CHERT* annual report evaluating previous extraction activities, providing recommendations related to future extraction activities, identifies changes in the baseline riparian vegetation maps created during the previous period of LOP authorization (baseline established in 1996 and revised in 2000), lists the cumulative impact to riparian vegetation from extraction activities, includes the biological monitoring, and provides the status of mitigation/monitoring areas approved by the Corps and other regulatory agencies related to previously identified impacts or LOP non-compliance activity. Annual report shall be submitted for all classes of operation.

March-June 15; Pre-extraction color vertical aerial photos are taken for all authorized extraction sites regardless of intent to mine. Timing of the spring aerial photographic series is dependant upon seasonal rainfall, forward-looking weather forecast and river stage.

May-August; Completed extraction proposals submitted to the Corps, NMFS, CHERT* and CDFG.

July 22; Gravel extraction bridges may be installed in areas where western snowy plovers are not nesting or expected to nest.

September 15 – 30; Gravel extraction bridges are to be removed. The bridge removal dates will vary by river reach.

September 20 – October 15; Stereoscopic color aerial photos to be taken. Stereoscopic photographic series shall be tied to annual low-flow period.

October 1; Gravel stockpiled on river bars must be removed on a daily basis after Oct. 1st. Following October 1st, extraction sites shall be groomed and graded to be free draining at the end of each working day.

October 15; Grading must be completed for all gravel bars. All gravel extraction ceases on river bars.

November 1; Certified post-extraction cross-sections and extraction volume data shall be delivered to CHERT* on or before November 1.

December 1; Post extraction report submitted to CHERT*. Electronic cross section data submitted to CHERT*. Biological monitoring data and reports submitted to Corps, NMFS, CHERT* and CDFG with the exception of biological data gathered in November and December.

December 31; Mitigation monitoring reports due to Corps, NMFS, CHERT* and CDFG. Biological monitoring data gathered in November through December shall be submitted to Corps, NMFS, CHERT* and CDFG.

APPENDIX E – LIST OF LOP 02-1 GRAVEL EXTRACTION OPERATIONS

**GRAVEL MINING AND EXTRACTION ACTIVITIES IN
HUMBOLDT COUNTY, CA AS AUTHORIZED BY CONDITIONAL
USE PERMIT OR VESTED RIGHTS**

Lower Mad River Reach

Site	Annual Permitted Volume (cubic yards)
Guynup Bar	200,000
Emmerson	50,000
Blue Lake	100,000
Christie	150,000
Johnson	30,000
Essex	40,000
Johnson-Spini and O'Neill	80,000
Miller-Almquist ?	?
Total	650,000

Lower Eel River Reach

Site	Annual Permitted Volume (cubic yards)
Hauck	150,000
Hansen	50,000
Sandy Prairie Plant A	70,000
Sandy Prairie Plant B	200,000
Mallard Pond	250,000
Worswick	200,000
Total	920,000

Van Duzen River

Site	Annual Permitted Volume (cubic yards)
Humboldt County PL Bar	3,000
Tom Bess	20,000
Jack Noble	100,000
Leland Rock	100,000
Total	223,000

Main Stem Eel PALCO Reach

Site	30,000 (and no more than 150,000/10 years)
PALCO Maynard Bar	30,000 (and no more than 150,000/10 years)
PALCO Vroman Bar	30,000 (and no more than 150,000/10 years)
PALCO Bowlby Bar	30,000 (and no more than 150,000/10 years)
PALCO South Fork Bar	30,000 (and no more than 150,000/10 years)
Humboldt County South Fork Bar	?
PALCO Larabee Bar	30,000 (and no more than 150,000/10 years)
PALCO Elinor Bar	30,000 (and no more than 150,000/10 years)
PALCO Three Mile Bar	30,000 (and no more than 150,000/10 years)
PALCO Dinner Creek Bar	30,000 (and no more than 150,000/10 years)
PALCO Upper & Lower Truck Shop Bar	30,000 (and no more than 150,000/10 years)
PALCO Scotia Bar	30,000 (and no more than 150,000/10 years)
Total	150,000 plus County

South Fork Eel River

Site	Annual Permitted Volume (cubic yards)
Cooks Valley Mendocino County	20,000
Cooks Valley Humboldt County	20,000
Humboldt County County Bar	?
Randall County Bar	5,000
Randall Twooby Park Bar & Home Bar	30,000
Wallan & Johnson	10,000
Total	175,000

Trinity River

Site	Permitted volume (cubic yards)
Mercer Fraser McKnight Bar	10,000
Mercer Fraser Willow Creek Bars	40,000
	20,000
	?
	?
Total	

Isolated Sites

Site	Permitted Volume (cubic yards)
<i>Main Stem Eel River at Fort Seward</i>	
Fort Seward Ranch	200,000/year
<i>Branstetter Bar on Bear River</i>	
Humboldt County	3,000/year (no more than 10,000/3 to 5 years)
<i>Charles Bar on Larabee Creek</i>	
Humboldt County	4,000/year (no more than 25,000/3 years)??
<i>Cook Bar on North Fork Mattole River</i>	
Humboldt County	34,000/3 to 5 years
Approximate Annual Total	220,000

Summary Table

River Reach	Annual Permitted Volume (cubic yards)
Lower Mad River	650,000
Lower Eel River	920,000
Van Duzen River	223,000
Main Stem Eel PALCO Reach	150,000 +
South Fork Eel River	175,000 +
Trinity River	70,000 +
Isolated Sites	220,000
Total	2,408,000 +

APPENDIX F – LIST OF ACCRONYMS

**GRAVEL MINING AND EXTRACTION ACTIVITIES IN
HUMBOLDT COUNTY, CA**

CCC	California Coastal Commission
CDFG	California Department of Fish and Game
cfs	Cubic Feet per Second
CHERT*	County of Humboldt Extraction Review Team
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
DBH	Diameter at Breast Height
ESA	Endangered Species Act
LB	Left Bank
LOP	Letter of Permission
MAR	Mean Annual Recruitment
NAD	North America Datum
NAVD	North American Vertical Datum
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
OHW	Ordinary High Water
RB	Right Bank
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

APPENDIX G– LISTED SPECIES UNDER FEDERAL ESA

GRAVEL MINING AND EXTRACTION ACTIVITIES IN HUMBOLDT COUNTY, CA

G-1 U.S. FISH & WILDLIFE SERVICE

U.S. Fish and Wildlife Service, Recommendations for the

Humboldt County LOP

Draft

Western Snowy Plover

The U.S. Fish and Wildlife Service (Service) considers the entire Eel River watershed within Humboldt County to be potential suitable habitat for plover nesting. Some gravel extraction sites within the watershed may not be considered suitable habitat and therefore, may be exempt from conditions designed to protect plovers. The Service will be available to determine if a proposed extraction site is considered suitable habitat for the plover. Twice (2-times) monthly surveys (mid and end of month) from March to October are needed each year to determine that suitable habitat is not occupied.

For the purposes of this consultation, the term "extraction site" is used to reference the entire area where sand and gravel extraction is to occur, including access/haul roads, storage, and processing sites. "Pre-extraction activities" refers to those activities required by an operator or regulatory agency to prepare for sand and gravel extraction activities. A "Service approved surveyor" is an individual who has a current Service Recovery Permit (Sec. 10a1A), or is authorized through the formal consultation process for the Humboldt County LOP (Sec. 7a2A), and has attended an annual meeting conducted by the Service to discuss plover issues related to sand and gravel extraction. The Service approved surveyors must be identified annually by the U.S. Army Corps of Engineers (Corps) prior to the end of "gravel week" in March, as identified in the LOP. The term "plover(s)" can refer to all life stages of the western snowy plover, including: adult, juvenile (fledged but not reproductively mature), chick (hatchlings unable to fly), and egg.

1. Operators should make an attempt to initiate all extraction related activities after September 15 to avoid direct effects to Plovers;
2. All pre-extraction activities within plover habitat that occur between March 1 and August 22 require a Service approved surveyor to minimize potential harm to plovers. To be effective, plover surveyors must have the authority to direct the activities of workers to avoid nests and other plover life stages, and require the activity be rescheduled until technical assistance from the Service is received regarding avoidance or minimization measures. Vehicle use within plover habitat should be restricted to those occasions where the activity cannot be completed otherwise;
3. Extraction activities within plover habitat would not begin sooner than July 22. If a plover nest is present within 1,000 feet of a planned extraction site, extraction activities would not commence until the nest has hatched or the fate of the nest has otherwise been determined and the Service has provided its approval. Service approval (verbal or written) will be provided when we have concurred with the nest fate determination, and we have completed an query to determine if: 1) take occurred, 2) take was attributed to the Federal action, and 3) the take was authorized (i.e., is incidental).

4. Extraction activities within plover habitat may begin after three consecutive days of surveys has determined that no plovers, or nests) are within 1,000 feet of the proposed extraction site. The three consecutive days must be completed by a Service approved surveyor, would not begin before July 20, and would include only days of acceptable weather conditions. The surveys must be conducted during a period when plover and nest detections are at their best; i.e. generally mornings, not during periods of low light, high winds or when heat waves distort observations.

Areas in the vicinity of the targeted extraction site should be surveyed for plovers and nests to determine the likelihood of chicks, juveniles, and adults moving into areas where they could be affected by operations (i.e. within 1,000 feet). "Vicinity" is used here to refer to all suitable plover habitat contiguous with the gravel extraction site. Because gravel bars and the riverine system on the Eel are dynamic, the Service would provide Technical assistance regarding annual determinations of what constitutes contiguous habitat.

5. Subsequent to July 21, extraction sites that have nests or plovers within 1,000 feet, or in their vicinity, should complete the following:
 - a. Daily plover surveys by a Service approved surveyor to determine the status of plovers and nests within the extraction site's vicinity;
 - b. If plovers are within 1,000 feet of the extraction site, operations may not commence until the plovers move to a distance greater than 1,000 feet (hazing is not authorized); and
 - c. Operators must ensure that extraction activities do not occur with plovers or nests being 1,000 feet or less to the extraction site.
6. Night driving (0.5 hour after sunset to 0.5 hour before sunrise) for extraction-related activities will not be permitted within suitable plover habitat. Authorized day-time driving will be minimized to those trips essential to complete authorized work. Car-pooling is encouraged. Parking, staging, and maintenance of vehicles and, equipment should occur at least 1,000 feet away from suitable habitat. The limited vehicle use authorized in suitable plover habitat should be limited to 10 miles per hour (mph), unless on an established access/haul road, where speeds may be as high as 30 mph. The first 3 vehicle trips on access/haul roads in suitable habitat each day should not exceed 10 mph.
7. The Service has not determined the effects of extracting sand and gravel resources may have on the suitability of plover habitat, and what effects sand and gravel extraction may have on the plovers' reproductive success. Consequently, the Service believes:
 - a. Banding operations on the Eel River gravel bars needs to continue so that nest site fidelity can be documented, individual adult, juvenile, and chicks can be followed to determine population recruitment, and mortality determined;
 - b. Extraction sites within nesting habitat need to be assessed and characterized relative to plover nesting, and nest success.

Northern Spotted Owl, Marbled Murrelet, and Bald Eagle

The Service understands that no suitable habitat for the owl, murrelet, and eagle will be removed or degraded.

G-2 NATIONAL MARINE FISHERIES SERVICE

DRAFT Monitoring Outline for Threatened Salmonids February 13, 2002

This list of monitoring guidelines is the bulk of the monitoring requirements provided to the Corps by NMFS at this time. This outline is not intended to be all inclusive, or in final narrative format for this draft stage of LOP development.

1. Compliance (Implementation) Monitoring

This type of monitoring is required to determine if an activity is implemented as proposed. This type of monitoring is also used to determine if all required protection measures and mitigation have been accomplished. Compliance monitoring requirements may include:

- a. Pre- and post-extraction topography.
- b. Post-extraction and implementation site visits.
- c. Reporting and verification requirements.

2. Effectiveness Monitoring

This type of monitoring is required to examine the effectiveness of protection measures or mitigation at minimizing the effects of the action on listed salmonids and their habitat. Effectiveness monitoring requirements may include:

- a. Measurements of width to depth ratios.
- b. Determination of planform changes.
- c. Riparian vegetation mapping and analysis.
- d. Examination of mitigation designed to retain large woody debris at mining sites.
- e. Examination of suspended sediment associated with bridge construction and removal.
- f. Where needed, snorkel surveys for verification of how project timing relates to salmonid run timing.
- g. Determination of the effectiveness of the vertical or horizontal offset. This may be accomplished by investigating the relationship between river flow, river stage and bar height (e.g., determining water surface elevation at specific flows on the rising hydrograph).

3. Effects Monitoring

This type of monitoring is conducted in order to better understand the effects that the proposed action has on listed salmonids and their habitat. Effects monitoring objectives are often posed as questions that the monitoring is designed to answer. Effects monitoring requirements may include:

- a. Examine effects to spawning habitat through spawning surveys, or redd mapping, substrate analysis, and scour resistance in the vicinity of mined and unmined bars. Substrate analysis may include surface pebble counts, core samples, and/or permeability analysis.
- b. Examine effects to rearing habitat using a well defined protocol which maps habitats, and use by fish, in the vicinity of mined and unmined bars. This habitat mapping would describe spatial and temporal trends in

habitat availability and use. Habitat mapping would include information on pool depth and quality, distance between riffles, riffle crest elevation (note that this is an elevation tied to the datum) substrate information, including embeddedness, thermal and velocity refugia, and complexity elements such as overhanging vegetation.